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**From:** Phillips, Linda [Phillips.Linda@epa.gov]  
**Sent:** 4/2/2018 3:57:06 PM  
**To:** Glenn, Barbara [Glenn.Barbara@epa.gov]  
**CC:** Kraft, Andrew [Kraft.Andrew@epa.gov]  
**Subject:** RE: Formaldehyde assessment - exposure update  
**Attachments:** formaldehyde - exposure section LJP.docx; formaldehyde - exposure section LJP-clean.docx; Branco et al 2015.pdf; Kim et al 2015.pdf; Liang et al 2015.pdf; new refs.docx; Copy of 2011 NATA Formaldehyde Ambient.xlsx; Copy of formaldehyde2015\_annual.xlsx

Hi Barbara and Andrew – I have made some updates to the formaldehyde exposure section. I was able to obtain newer air monitoring (AQS) and modeling (NATA) data from Madeleine Strum and Ted Palma in OAR. I also reviewed the 213 new references that were identified in the 2016 HERO lit search, requested several from HERO, and added 3 new references to the text (I am still waiting for one more reference). I also deleted a table, figure and some text that seemed to provide unnecessary detail. I am attaching both a clean and marked up version of the exposure section for your review. I am also attaching the 3 new references that I added (the citations for these are listed at the end of the exposure section), a list of references that I reviewed, and 2 spreadsheet that contain the AQS and NATA data obtained from OAR. Please let me know if you have any questions. I will be out on sick leave beginning next Tuesday and expect to be out for a couple of weeks. If additional work needs to be done on this, I will revisit it when I return, unless you have questions before that. I hope this is what you were looking for. Linda

*Linda J. Phillips, Ph.D.*

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**From:** Glenn, Barbara  
**Sent:** Tuesday, March 27, 2018 1:54 PM  
**To:** Phillips, Linda <[Phillips.Linda@epa.gov](mailto:Phillips.Linda@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

Very good. Thanks.

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**From:** Phillips, Linda  
**Sent:** Tuesday, March 27, 2018 1:52 PM  
**To:** Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

Thanks Barbara – I went thru the list and requested a few papers from HERO (also downloaded a few). I'll keep you posted on progress. Linda

*Linda J. Phillips, Ph.D.*

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**From:** Glenn, Barbara  
**Sent:** Tuesday, March 27, 2018 12:53 PM  
**To:** Phillips, Linda <[Phillips.Linda@epa.gov](mailto:Phillips.Linda@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

Hi Linda,

The formaldehyde project page is the one that says Formaldehyde (50-00-0).

On the right side, starting with 2016 LitSearch -Oct (1652), are the tags. For this update (2016), the exposure studies are in the tag, Exposure Lit Search – Oct 2016 (399). You should look at the Search Update (213) as those are the unique citations that were found.

Thanks again, Barbara

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**From:** Phillips, Linda  
**Sent:** Wednesday, March 14, 2018 8:39 AM  
**To:** Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

OK. Thanks. I remember talking to Jackie about this while she was working on it. Hopefully, I will be able to catch up quickly, but I will let you know if I need help. Linda

*Linda J. Phillips, Ph.D.*

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**From:** Glenn, Barbara  
**Sent:** Wednesday, March 14, 2018 8:36 AM  
**To:** Phillips, Linda <[Phillips.Linda@epa.gov](mailto:Phillips.Linda@epa.gov)>  
**Cc:** Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

Hi Linda,

Thank you. After you start to get acquainted with this material, Andrew and I would be happy to chat with you to answer any questions you have.

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**From:** Phillips, Linda  
**Sent:** Wednesday, March 14, 2018 7:23 AM  
**To:** Glenn, Barbara <[Glenn.Barbara@epa.gov](mailto:Glenn.Barbara@epa.gov)>  
**Cc:** Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>  
**Subject:** RE: Formaldehyde assessment - exposure update

Hi Barbara – I was on leave earlier this week and just saw your message this morning. I will be happy to help on this. I will be on leave again tomorrow, but will try and start on this on Friday. I hope that works for you. Linda

*Linda J. Phillips, Ph.D.*

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**From:** Glenn, Barbara  
**Sent:** Monday, March 12, 2018 3:38 PM  
**To:** Phillips, Linda <[Phillips.Linda@epa.gov](mailto:Phillips.Linda@epa.gov)>  
**Cc:** Kraft, Andrew <[Kraft.Andrew@epa.gov](mailto:Kraft.Andrew@epa.gov)>  
**Subject:** Formaldehyde assessment - exposure update

Hi Linda,

I understand that you are able to help Andrew and I update the section on formaldehyde exposure for the assessment. The full section is located in the appendix to the assessment. Most urgently, the discussion of NATA using the most recent analyses and conclusions about the contribution of formaldehyde to ambient concentrations is needed, and the data from EPA's air quality monitoring (EPA's Air Quality System Data Mart) should be updated. We also have conducted an update of literature for August 2015 to Sept 2016 using a set of search terms originally created by Jackie Moya. The results of this search and the previous search are located in the HERO project page, but I've attached an Endnote file of the 2016 update for your convenience. There may be important information from those references that need to be included as well.

I've attached a copy of the appendix. You could extract that section to edit it (A.1.2) and we can insert it back into the document when it is ready. We are starting to schedule briefings for program offices in April, but the Agency Review has not yet begun. We will be trying to finish the Appendix by the end of May I expect, but we would like to include the information about the most recent NATA assessment in the main document, and that we would like to have ready sometime in April.

Thank you very much and we are happy to help you find information, documents or anything else.  
Regards, Barbara and Andrew